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Outstand Performance, Pacific Northwest National Laboratory, 2002; Distinguished Service Award, U.S. State Department, 2001; BER50 Award in recognition of his research accomplishments, United States Department of Energy, 1997; Director's Award for Research Group Performance, Pacific Northwest National Laboratory, 1993; Scientific Book Of The Year, for *A Primer on Greenhouse Gases* with Don Wuebbles, (Lewis Publishing), Lawrence Livermore National Laboratory, 1991; Research Interests: Energy, Economics, Technology, and Climate; The integrated assessment of climate change; Mailing Address: Pacific Northwest National Laboratory, Joint Global Change Research Institute at the University of Maryland, 8400 Baltimore Avenue, Suite 201, College Park, MD 20740-2496; (Telephone: 301-314-6749; email: jae@pnl.gov).

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Department, Exxon Mobil Corporation, 1998-present. Concurrent Positions: Visiting Scientist, Institute of Astronomy, Cambridge University, 1978: Visiting Fellow, The Institute for Advanced Study, 1980-1985; Professional Service and Memberships: American Association for the Advancement of Science; NATO Collaborative Research Grants Panel 1984-86; International Petroleum Industry Environmental Conservation Association: Global Climate Change Working Group 1988-present (Vice Chair 1995-7, Chair 1997-99), Member of Executive Committee 2000- present; International Chamber of Commerce 1993- present: Energy Commission (Vice Chair 1998-2000), Environment and Energy Commission 1993- (Vice Chair 2003- present); Unites States Council for International Business 1993-present (Environment Steering Committee 1998-present); Editorial Boards: Annual Reviews of Energy and Environment 1992-1996, Consequences 1996-98; Global Climate and Energy Project Stanford University member Management Committee; Review Committees: US Department of Energy, State of the Art Review of Greenhouse Science, 1984; US Environmental Protection Agency, Subcommittee on Global Climate Change, Science Advisory Board, 1988-1989; International Geosphere Biosphere Program Evaluation Committee, 1994-1996; Intergovernmental Panel on Climate Change: Task Group on New Emissions Scenarios 1995-present; Lead Author Working Group III: Third Assessment Report- Decision-making Frameworks, Fourth Assessment Report- Mitigation from a Cross-Sectoral perspective; Stanford University School of Engineering Advisory Council, 2004-present. Research Interests: Global Climate Change: Science, Technology, Economics, and Policy; Technology Innovation: research, development, deployment and transfer; Linkages: local and regional air pollution, climate change and health. Mailing Address: Exxon Mobil Corporation, 5959 Las Colinas Blvd, Room 3314, Irving, Texas, 75039; (Telephone: 972-444-1674; email: brian.p.flannery@exxonmobil.com).

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Management, Massachusetts Institute of Technology, 1973-; Director, M.I.T. Center for Energy Policy Research, 1978-80; Director, International Energy Studies Program, M.I.T. Energy Laboratory, 1978-83; Associate Director, M.I.T. Energy Laboratory, 1980-83; Visiting Scholar, London Business School, 1983-84; Chair, M.I.T. Faculty, 1989-91; William F. Pounds Professor of Management, M.I.T., 1990-2001; Co-Director, M.I.T. Joint Program on the Science and Policy of Global Change, 1991-. Professional Service and/or Memberships: Member, Climatic Impact Committee, Division of Physical Sciences, National Academy of Sciences, 1973-75; Chair, Governor's Emergency Energy Technical Advisory Committee, State of Massachusetts, 1973-74; Member, Editorial Council, Journal of Environmental Economics and Management, 1973-86; Member of Review Panel, Study of Peaceful Nuclear Explosives, sponsored by the U.S. Arms Control and Disarmament Agency, 1975; Member, U.S. National Petroleum Council, 1975-83; Member, Nuclear Fuels Working group, Atlantic Council of the United States, 1975-78; Elected Town Meeting Member, Belmont, Massachusetts, 1981-; Periodic columnist, Nikkei Sangyo Shimbun, Tokyo, 1980-82; Periodic columnist, Sankei Shimbun, Tokyo, 1983-84; Member, Editorial Board, Cambridge Energy Studies, Cambridge University Press, 1984-87; Member, Panel on Climate Variability, Climate Change and the Planning and Management of U.S. Resources, American Association for the Advancement of Science, 1986-89; Member, Committee on Alternative Energy R&D Strategies, National Academy of Sciences and National Academy of Engineering, 1989-90; Member, Advisory Panel on Study of "Systems at Risk from Climate Change", U.S. Congress, Office of Technology Assessment, 1992-93; Member, Committee on Metrics for Global Change Research, US National Research Council, 2003-05; Member, Scientific Committee, International Geosphere-Biosphere Program, 2006-. Awards and Honors: Tau Beta Pi (engineering honorary) and Pi Tau Sigma (mechanical engineering honorary), University of Texas at Austin, 1956-57; Hamilton Award, Outstanding Engineering Graduate, University of Texas at Austin, 1957; Environmental Policy Fellow, American Council for Capital Formation, 1998-99; Research Interests: Applied Economics, Energy, Environment, Public Policy; Mailing Address: Joint Program on the Science and Policy of Global Change, Building E40-439, Massachusetts Institute of Technology, Cambridge, MA 02139; (Telephone: 617-253-6609; email: Hjacoby@mit.edu).

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Assembly of Mathematical and Physical Sciences, the executive committee of the Space Studies Board, and the executive committee of the Board on Atmospheric Sciences and Climate of the National Research Council, serving as a member of the Woods Hole Oceanographic Institution Corporation and serving on the council of the American Meteorological Society, Atmospheric Dynamics Committee of the AMS, MIT representative to UCAR; Memberships: American Meteorological Society, National Academy of Sciences, American Academy of Arts and Science, American Association for the Advancement of Science, American Geophysical Union, European Geophysical Society, World Institute of Sciences, Norwegian Academy of Science and Letters; Awards and Honors: Phi Beta Kappa, 1960, Sigma Xi, 1960, NCAR Outstanding Publication Award, 1967; AMS Meisinger Award, 1968; AGU Macelwane Award, 1969; Alfred P. Sloan Fellowship, 1970-1976; Vikram Amblal Sarabhai Professor at Physical Research Laboratory, Ahmedabad, India, 1985; AMS Charney Award, 1985; Japanese Society for the Promotion of Science Fellowship, Dec. 1986-Jan. 1987; Member, National Academy of Sciences, 1977; Fellow, American Academy of Arts & Sciences, 1977; Fellow, American Meteorological Society, 1980; Fellow, American Geophysical Union, 1980; Fellow, American Association for the Advancement of Science, 1994; Sackler Visiting Professor, Tel Aviv University, January 1992; Landsdowne Lecturer, University of Victoria, March 1993, Member, Norwegian Academy of Science and Letters, 1990; Bernhard Haurwitz Memorial Lecturer, American Meteorological Society, 1997; Research: The general circulation of the earth's atmosphere, Climate dynamics, Hydrodynamic shear instability, Dynamics of the middle atmosphere, Dynamics of planetary atmospheres, Parameterization of cumulus convection, Tropical meteorology; Mailing Address: Building 54, Room 1720, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA 02139; (Telephone: 617-253-2432; email: rlindzen@mit.edu).

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Press, MIT Press, Cambridge University Press, Climatic Change, Energy J., Global Environmental Change, Global Environmental Politics, International Environmental Affairs, International Security, International Studies Quarterly, J. of Conflict Resolution; J. of Policy Analysis and Management, J. of Conflict Resolution; Millennium; Negotiation J.; Policy Sciences; Science; Awards and Honors: 2004 winner, Harold and Margaret Sprout Award, International Studies Association; Research Interests: International Environmental Law, Policy, and Negotiations, Science and Technology in Public Policy, Scientific and Technological Assessments: methods, processes, determinants of effectiveness, Strategic decision-making and decision-making under uncertainty, especially in regulatory contexts; Mailing Address: Policy and Law, Hutchins Hall 432, University of Michigan, 625 S. State St., Ann Arbor MI, 48109; (Telephone: 734-763-6133; email: parson@umich.edu).

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Department of Agriculture, 1986-1998; Visiting Scientist, Joint Program on the Science and Policy of Global Change, Massachusetts Institute of Technology, 1992-1993; Senior Research Scientist, Laboratory for Energy and the Environment & Associate Director for Research, Joint Program on the Science and Policy of Global Change, Massachusetts Institute of Technology, 1998-present. Professional Service and/or Memberships: American Agricultural Economics Association, 1986-1999; American Economic Association 1983-present, American Geophysical Union 2000-present. Review Committees: US delegate; OECD Ag. Research Director's Meeting, 1988; Author, Intergovernmental Panel on Climate Change, First Assessment Report, 1989-1991, Chair, U.S. Federal Task Group: Economics of Global Change, 1991-1992, Convening Lead Author, Intergovernmental Panel on Climate Change, Second Assessment Report, 1993-1996, Vice Chair, U.S. National Assessment Working Group, 1997-1998, National Research Council, Panel on Integrated Environmental & Economic Accounting, 1997-1999; Co-Chair, US Agricultural Sector Assessment, National Assessment of Climate Change and Climate Variability, 1998-2002, National Research Council, Committee on Global Change Research, 2000-2002, Advisory Committee, Consortium for Agricultural Soils Mitigation of GHGs, 2001-2004, US Carbon Cycle Science Steering Group, 2003present; Awards and Honors: USDA Award for Superior Service, 1989; ERS Administrator's Award for Outstanding Research, 1989; ERS Excellence Award, 1995, Alan A. Powell Award, 2001; air pollution, technical change. Mailing Address: Massachusetts Institute of Technology, E40-433, 77 Massachusetts Avenue, Cambridge, MA 02139; (Telephone: 617-253-8040; email: *jreilly@mit.edu*).

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## ROSENZWEIG, CYNTHIA E.

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1991; <u>Professional Experience</u>: Senior Research Scientist, NASA Goddard Institute for Space Studies, Climate Impacts Group; Convening Lead Author, chapter on observed changes for the IPCC Working Group II Fourth Assessment Report; served on the IPCC Task Group on Data and Scenarios for Impact and Climate Assessment (TGICA); <u>Mailing address</u>: National Aeronautics and Space Administration, NASA Goddard Institute for Space Studies, 2880 Broadway, New York, New York 10025; (Telephone: 212-678-5560, email: <u>crosenzweig@giss.nasa.gov</u>).

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Education: B.S., Mechanical Engineering, California Polytechnic State University, 1971; M.S., Operations Research, UCLA, 1973; Engineering Degree, UCLA 1977; Ph.D. Systems Engineering (Water Resources and Hydrologic Systems Analysis), UCLA, 1978. Professional Experience: Assistant Professor, Systems and Civil Engineering, Case Western Reserve University, 1978-1982; Associate Professor (1983-1987), Professor (1987-2000), Head (1989-1996) Department of Hydrology and Water Resources, University of Arizona, Tucson, 1983-2000; Regents Professor and Founding Director of NSF Science and Technology Center for Austainability of semi-Arid Hydrology and Riparian Areas@SAHRA), University of Arizona, Tucson, 2000-2003; Distinguished Professor of Civil and Environmental Engineering, and Earth System Science, University of California, Irvine, 2003-present; Concurrent Positions: Director, Center for Hydrometeorology and Remote Sensing (CHRS), The Henry Samueli School of Engineering, University of California, Irvine, 2003-present; Adjunct Professor, Department of Hydrology and Water Resources, University of Arizona, Tucson, 2004present; Professional Service and Memberships: Chair, Scientific Steering Group (SSG) of the Global Energy and Water Cycle EXperiment (GEWEX) of the World Climate Research Programme (WCRP); Member, UCAR Board of Trustees; Currently Chair of the Committee to Assess the National Advanced Hydrologic Prediction Service (AHPS) and the NAE liaison to the NRC for applied atmospheric sciences, space engineering, military [non-navel] engineering, acoustics, emerging technologies, and interdisciplinary areas; current member of four editorial boards; Past-President of AGU's Hydrology Section; former editor of Water Resources Research, published by AGU; Past Member, AMS Council; Emeritus Member, NOAA Science Advisory Board; Expert Testimonies to both U.S. Senate and House Committees; U.S. Member of the Hydrology Commission for WMO; Present and Past Member and Chair of over 30 other advisory and review committees and boards for NASA, NOAA, DOE, EPA, NSF, National Labs, UNESCO, WMO, and professional societies. National Research Council (NRC) service over the past 15 years includes member of 7 NRC committees; Awards and Honors: Life Member, Phi Kappa Phi, 1988; Japan Society for the Promotion of Science (JSPS) Award, 1989, 1998; Fellow, American Geophysical Union (AGU), 1994; Fellow, American Meteorological Society (AMS), 1995; Fellow, American Association for the Advancement of Science (AAAS), 1997; Fellow, International Water Resources Association (IWRA), 2001; Group Honor Award for Excellence, U.S. Department of Agriculture, 2001; Elected Corresponding Member, to International Academy of Astronautics (IAA), 2002; Life Fellow, Indian Association of Hydrologists, Roorkee, India; elected to National Academy of Engineering (NAE), 2003; William Nordberg Memorial Lectureship, NASA Goddard Scientific Colloquium, 2004; NASA

Distinguished Public Service Award, 2005; <u>Research Interests:</u> Hydrometeorology and hydroclimate modeling, remote-sensing application in hydrology, interface of hydrology with water resources management in semi-arid regions, interpretation of scientific information, such as climate forecasts and flood forecasts, by decision makers and the public at large. <u>Mailing Address:</u> University of California, Irvine, Dept. of Civil and Environmental Engineering, E/ 4130 Engineering Gateway, Irvine, CA 92697-2175; (Telephone: 949-824-8825;email: <u>soroosh@uci.edu</u>).

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Commission, Second Vice-Chairman (1988-1990); Louisiana Forestry Commission, Member (1988-1990); Gulf of Mexico Fishery Management Council, Member (1988-1990); Louisiana Wildlife and Fisheries Commission, Ex-Officio Member and Secretary, (1988-1990); Governor's Cabinet on Economic Development, State of Louisiana, Member (1989-1990); Louisiana Artificial Reef Council, Chairman (1988-1990); Louisiana Offshore Terminal Authority, Environmental Director (1988-1990); Louisiana Wetland Conservation and Restoration Task Force, Member (1989-1990); Southeastern Association of Fish and Wildlife Agencies, Vice President (1990); Global Change Task Force, U.S. Department of Interior, National Biological Service, Member (1994); Seventh American Forest Congress, Yale University, Southern Region Forest Research Committee, Chairman, (1995-96); Heinz Center for Science, Economics and the Environment, Member, Panel on Risks, Vulnerability, and True Costs of Coastal Hazards (1997-1998); National Assessment Synthesis Team, U.S. Global Change Research Program and National Science Foundation, Member and Lead Author, 1998-2001; Intergovernmental Panel on Climate Change, Working Group II, Lead Author, Third and Fourth Assessment Reports (1998-2001 and 2005-present); Panel on River Basin and Coastal Systems Planning, Panel Member, National Academy of Sciences (2002-2004); United Nations Framework Convention on Biodiversity, Ad-Hoc Technical Expert Group on Biodiversity and Adaptation to Climate Change, Member, 2005. Research: wetlands, forestry, climate change, sea level rise, subsidence, coastal processes/hazards. Mailing Address: U.S. Geological Survey, 700 Cajundome Blvd., Lafayette, LA 70506; (Telephone: 318-256-5628; email: Virginia Burkett@usgs.gov).

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1977; Administrator, Environmental Science Services Administration, Department of Commerce, 1965-1970; Chief, United States Weather Bureau, Dept of Commerce, 1963-1965; President, Travelers Research Center, Inc., 1960-1963; Director, Meteorology Development Laboratory, 1952-1959; Research Scientist, Atmospheric Analysis Laboratory, 1950-1952; Captain, United States Air Corps, 1942-46; Professional Service and/or Memberships: National Academy of Engineering (US); Royal Academy of Engineering (UK); Academy of Engineering of Japan; Academy of Engineering of Russia; Academy of Engineering of Finland; Academy of Engineering and Technological Sciences, Australia; American Philosophical Society; American Meteorological Society; American Geophysical Union; American Academy of Arts and Sciences; U.S. Representative, World Meteorological Organization, 1963-1977; U.S. Representative, International Oceanic Commission, 1970-1972; U.S. Representative, International Whaling Commission, 1973-1977; Member, U.S. Department of Energy Biological and Environmental Research Advisory Committee (BERAC); Board of Overseers, Harvard University, 1977-1979; National Advisory Committee on Oceans and Atmosphere, 1979-1984; Board of Directors, Health Effects Institute, 1996-present; Member, United States Commission on Ocean Policy, 2003-2005; Awards and Honors: Honorary Sc.D. Degrees - Long Island University, Rensselear Polytechnic Institute, University of Milwaukee-Wisconsin; Johns Hopkins University; University of Bridgeport; University of Rhode Island; Drexel University; Clarkson University; Charles Franklin Brooks Award; Neptune Ward for Contributions to Marine Affairs; International Conservation Award; Matthew Fontaine Maury Award; Davis B. Stone Award; Rockefeller Public Service Award; Jesse L. Rosenberger Medal;

50th Anniversary Medal; American Meteorological Society; Cleveland Abbe Award; Godfrey L. Cabot Award; Delmer S. Fahrney Medal; International Meteorological Organization Prize; Chevalier de la Legion d'Honneur; Compass Distinguished Achievement Award; Kenneth Andrew Roe Award; Charles E. Lindbergh Award; Tyler Prize for Environment Achievement; University of California; Vannevar Bush Award; Australian Centenary Medal; Mailing Address:

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and Honors: NRC Research Associate, 1984-1985; Fulbright Senior Specialist, 2003; Fellow, American Meteorological Society, 2004; Research Interests: Synoptic and applied climatology, climate impact analysis, local and regional climate variability and change; Mailing Address: Department of Geography, 238 Geography Building, Michigan State University, East Lansing, MI 48824; (Telephone: 517-353-9186; email: winkler@msu.edu).

## YOHE, GARY W.

Education: John E. Andrus Professor, Economics, Wesleyan University, Presently; Ph.D., Yale University, 1975; M.A., Philosophy, Yale University; M.A., State University of New York-Stony Brook; B.A., Mathematics, University of Pennsylvania, 1970; Professional experience: Currently serving as Convening Lead Author for Chapter 21 (or perhaps 5 after the reorganization – "Uncertainties in Assessing Response Effectiveness") for the Response Options Technical Volume of the Millennium Ecosystem Assessment; Lead author, Chapters of the Working Group II contribution (Impacts, Adaptation, and Vulnerability), Third Assessment Report (the TAR) of the Intergovernmental Panel on Climate Change (the IPCC): Chapter 2 (Methods and Tools), Chapter 18 (Adaptation to Climate Change in the Context of Sustainable Development and Equity), and Chapter 19 (Synthesis); Lead author for Chapter 1 (Setting the Stage: Climate Change and Sustainable Development) of the contribution of Working Group III (Mitigation) to the TAR, collaborator, Center for Integrated Study of the Human Dimensions of Global Change at Carnegie Mellon University; Memberships: Science Advisory Committee for the Inter-American Institute, Science Committee of the Global Analysis, Integration and Modeling Program of the IGBP; Research Interests: Applying the first principles of microeconomic analysis to decision-making under uncertainty and to exploring the tradeoff between mitigating climate change and abating its potential damage. Most recently, Dr. Yohe has been concerned with judging the vulnerability of economic, political and social systems to climate change, climate variability, and climate policy when adaptation is included in the calculus of cost accounting; Mailing address: Department of Economics, 238 Church St., Wesleyan University, Middletown, Connecticut, 06459; (Telephone: 860-685-3658; email: gyohe at wesleyan.edu).

### ZHANG, MINGHUA H.

Education: B.A., 1982, M.S., 1984, Nanjing Institute of Meteorology, Atmospheric Sciences; Ph.D., 1987, Institute of Atmospheric Physics of the Chinese Academy of Sciences, Atmospheric Sciences; Postdoctoral Visiting Scientist, State University of New York-Stony Brook, 1988-1990; Professional Experience: Professor and Associate Dean, Marine Sciences Research Center of Stony Brook University-SUNY, 2003-present; Professor and Director, Institute for Terrestrial and Planetary Atmospheres of the Stony Brook University-State University of New York, 2001-present; Assistant and Associate Professor, Stony Brook University-State University of New York, 1990-2003; Professional Service and/or Memberships: Co-chairman, Cloud Parameterization and Modeling Working Group of the DOE Atmospheric Radiation Measurement Program, 2000-2005; American Meteorological Society, 1989-present; Member, American Geophysical Union, 1989-present; Review Committees: Member, ARM Climate Research Facility Review Board, 2005-present; Awards and Honors: Early Faculty

Career Award, National Science Foundation, 1996; <u>Research Interests</u>: Climate change analysis and modeling, cloud-climate interactions, interfacing physical parameterizations of general circulation models with field experimental data; <u>Mailing Address</u>: 125 Endeavor MSRC, Stony Brook University, Stony Brook, NY 11794-5000; (Telephone: 631-632-8318; email: *mzhang@notes.cc.sunysb.edu*).